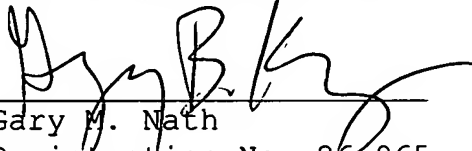## REMARKS

The above amendments have been made to amend the claims and the title and to conform the claims to U.S. practice.

Respectfully submitted,
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Preliminary Amendment
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AN LED <s>DRIVE</s> DRIVING DEVICE AND LED <s>DRIVE</s> DRIVING
METHOD

10/532216

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<u>**Attachment B**</u>

1.   (currently amended) An   LED   driving   device
comprising:

        a power supply voltage generator;

5   an applied voltage storage that stores

therein an ~~independent~~ applied voltage value

~~for~~ on an   each-color basis corresponding to a

minimum emission voltage of an LED of each of

colors, red, green and blue, provided in a

10   display device; and

        an applied voltage former that converts a

voltage generated in the power supply voltage

generator into the applied voltage value stored

in the applied voltage storage to apply to the

15   LED of each of colors.

2.   (currently amended) ~~The LED driving device~~

~~according to claim 1, wherein the applied~~

~~voltage storage is comprised of writable~~

~~memory, and a signal line is connected to the~~

20   ~~memory to input an applied voltage value to~~

~~store~~ An LED driving device comprising:

        a power supply voltage generator;

        an applied voltage storage that stores

therein applied voltage values on an LED of

25   each of colors, red, green and blue, provided

in a display device, the values being the same

on the same color, while being different

between different colors; and

an applied voltage former that converts a

voltage generated in the power supply voltage

5   generator into an applied voltage value stored

in the applied voltage storage to apply to the

LED of each of colors.

3.   (original) The LED driving device according

to claim 1, wherein the applied voltage storage

10   stores independent applied voltage values for

LEDs of the same color.

4.   (original) The LED driving device according

to claim 1, further comprising:

a duty ratio storage which is comprised of

15   writable   memory   and   stores   therein,

independently of the LED of each of colors, a

duty ratio of a PWM signal to make a fine

adjustment   to   luminance   during   an   emission

period of the LED of each of colors;

20   a PWM controller which forms the PWM signal

based on the duty ratio stored in the duty

ratio storage independently for the LED of each

of colors; and

a signal line connected to the duty ratio

25   storage to input the duty ratio to the duty

ratio storage.

5.　(original) The LED driving device according to claim 4, wherein the applied voltage storage stores an applied voltage value for the LED of each of colors enabling the LED of each of

5　colors to emit light in luminance more than or equal to a desired luminance, while the duty ratio storage stores a duty ratio for bringing an emission luminance of the LED of each of colors close to the desired luminance.

10　6.　(original) The LED driving device according to claim 4, wherein the duty ratio storage stores independent duty ratios on LEDs of the same color.

7.　(original) The LED driving device according

15　to claim 1, wherein among LEDs of red, green and blue, red LEDs undergo cascade connection.

8.　(original) The LED driving device according to claim 1, wherein the power supply voltage generator generates a single voltage value, and

20　the applied voltage former has a D/A converter that performs digital/analog conversion on a voltage value stored in the applied voltage storage, and a voltage varying section that converts the single voltage generated in the

25　power supply voltage generator into a voltage

of an analog value converted in the D/A converter.

9. (original) A driving voltage setting device that sets a driving voltage of the LED driving
5 device according to claim 1, comprising:

a voltage applier that applies a variable voltage to the LED of each of colors, red, green and blue;

a detector that detects a luminance of the
10 LED of each of colors when the voltage applier applies the voltage; and

a data writer that writes in the applied voltage storage a minimum applied voltage value of the LED of each of colors when the detector
15 detects the luminance more than or equal to a desired value on the LED of each of colors, as an applied voltage value of the LED of each of colors.

10. (original) The driving voltage setting
20 device according to claim 9, further comprising:

a PWM controller that controls the LED of each of colors, red, green and blue, using a PWM signal with a different duty ratio,
25 wherein the data writer writes in memory a duty ratio on the LED of each of colors when the

detector detects a desired luminance on the LED of each of colors.

11. (original) The driving voltage setting device according to claim 9, wherein the

5 voltage applier applies a variable voltage interpedently to each of LEDs of the same color, the detector detects a luminance independently on each of the LEDs of the same color, and the data writer writes a minimum

10 applied voltage value of each of the LEDs of the same color when a luminance more than or equal to a desired value is detected on the each of the LEDs of the same color in the applied voltage storage independently as the

15 applied voltage value.

12. (original) The driving voltage setting device according to claim 10, wherein the PWM controller controls each of the LEDs of the same color using a PWM signal with a different

20 duty ratio, and the data writer writes in the memory a duty ratio on each of the LEDs of the same color when a desired luminance is detected on the each of the LEDs of the same color.

13. (original) An LED driving method, wherein a

25 minimum driving voltage such that a desired luminance is obtained is measured in advance

for an LED of each of colors, red, green and blue, the driving voltage is stored in an applied voltage storage for the LED of each of colors, and a voltage of the stored value is applied to the LED of each of colors.

14. (original) The LED driving method according to claim 13, wherein PWM control is performed on the LED of each of colors using a PWM signal with a duty ratio varying with the LED of each of colors in such a state that the minimum driving voltage is applied to the LED of each of colors.

15. (original) A driving voltage setting method for setting a driving voltage of the LED driving device according to claim 1, comprising:

a variable voltage applying step of applying a variable voltage to an LED of each of colors, red, green and blue;

a luminance detecting step of detecting a luminance of the LED of each of colors when the variable voltage is applied; and

a data writing step of writing in the applied voltage storage a minimum applied voltage value of the LED of each of colors when the luminance more than or equal to a desired

value is detected, as an applied voltage value of the LED of each of colors.

16. (original) The driving voltage setting method according to claim 15, wherein the variable voltage applying step, the luminance detecting step and the data writing step are carried out while performing PWM control using a PWM signal with an ON duty ratio more than or equal to a predetermined value, an applied voltage value of the LED of each of colors is stored in the applied voltage storage, an ON duty ratio of the PWM signal is then decreased gradually to make a fine adjustment to the luminance of the LED of each of colors, and the ON duty ratio of the PWM signal is stored in memory when a desired luminance is obtained.